



INTERNATIONAL UNION  
OF RAILWAYS

*unity, solidarity, universality*

# Railways and Sustainable Development

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New York, 1st March 2010



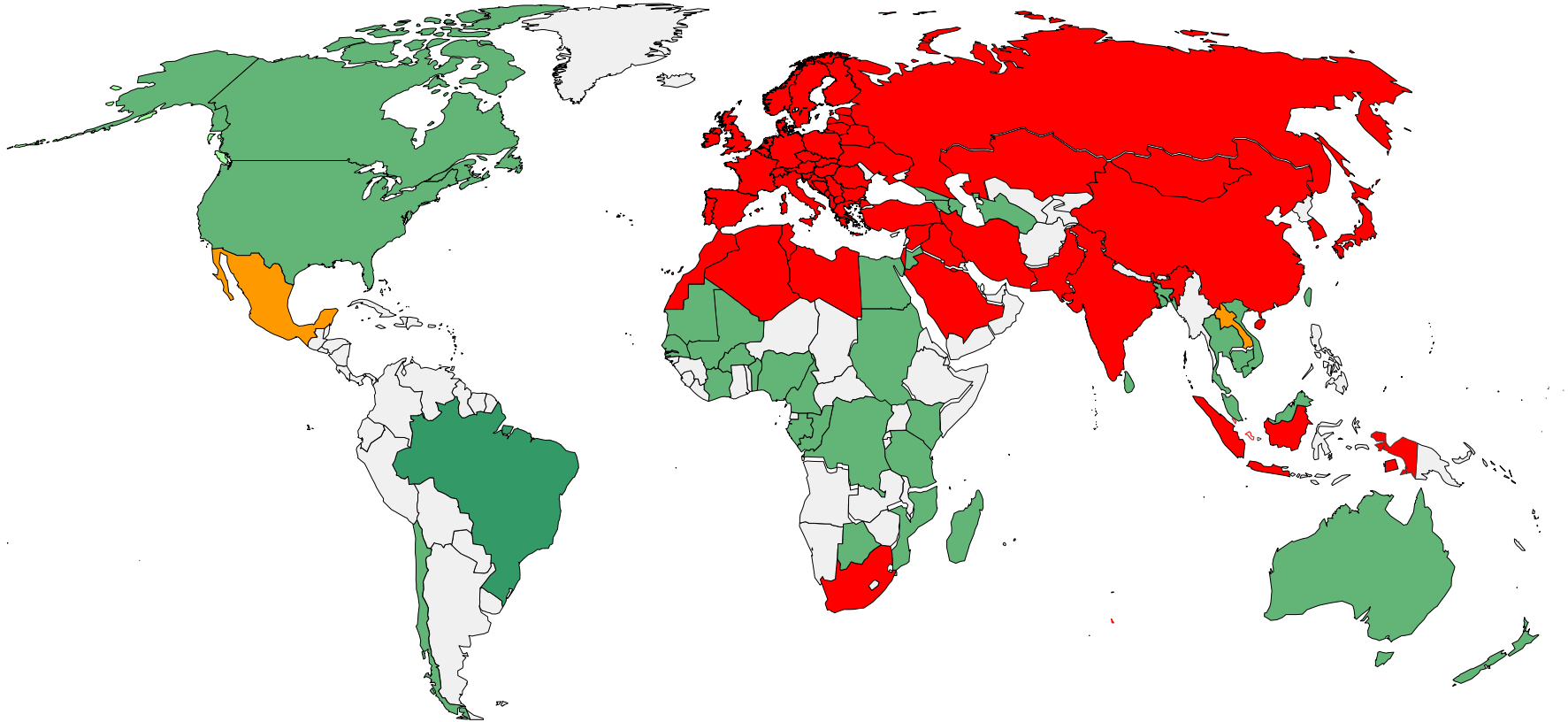
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# About the UIC & the global rail sector

# UIC: The International Union of Railways

*200 members worldwide*



Members ■ Active ■ Associate ■ Affiliate

# UIC Mission

**Promoting the development of rail transport  
at world level,  
in order to meet challenges  
of mobility and sustainable development**

# Global rail market

- > **The rail sector employs over 6.3 million people worldwide**

This includes:

- 2 million in China.

- 1.4 million in India

- 1.1million in the EU

- > **Rail investment in 2009**

- EU railways invested a total of 44 672 million euros

- Turkey invested 606 million euros

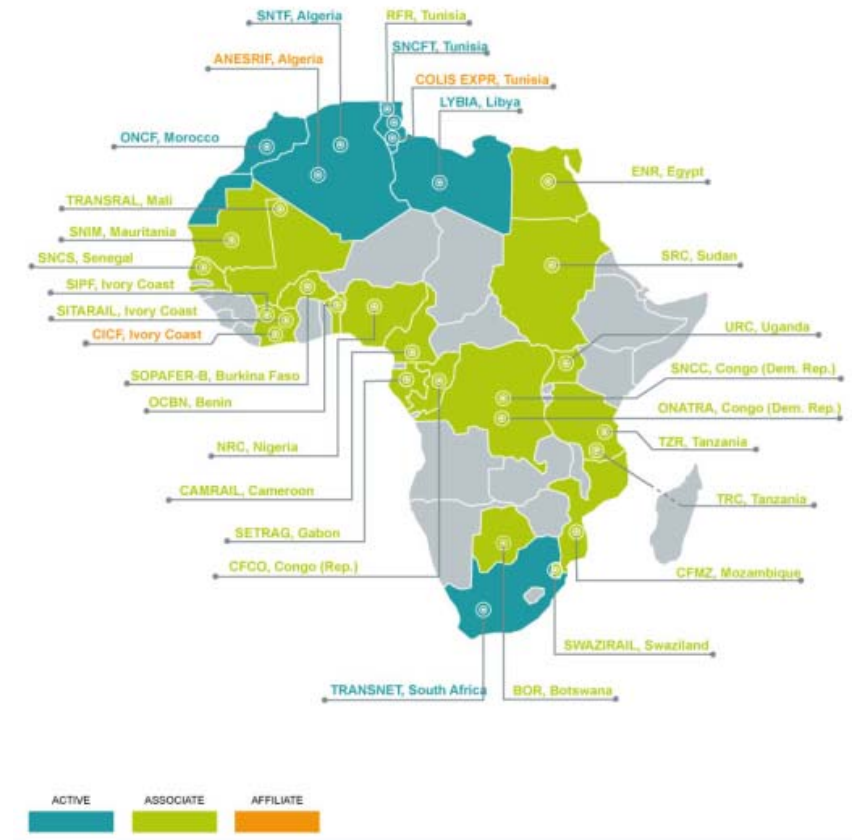
- Korea invested 725 million euros

- Kazakhstan invested 503 million euros

- > **Between 2000-2005, global rail freight grew by around 25% and land passenger traffic grew by about 19%**

# Example of cooperation: African railways

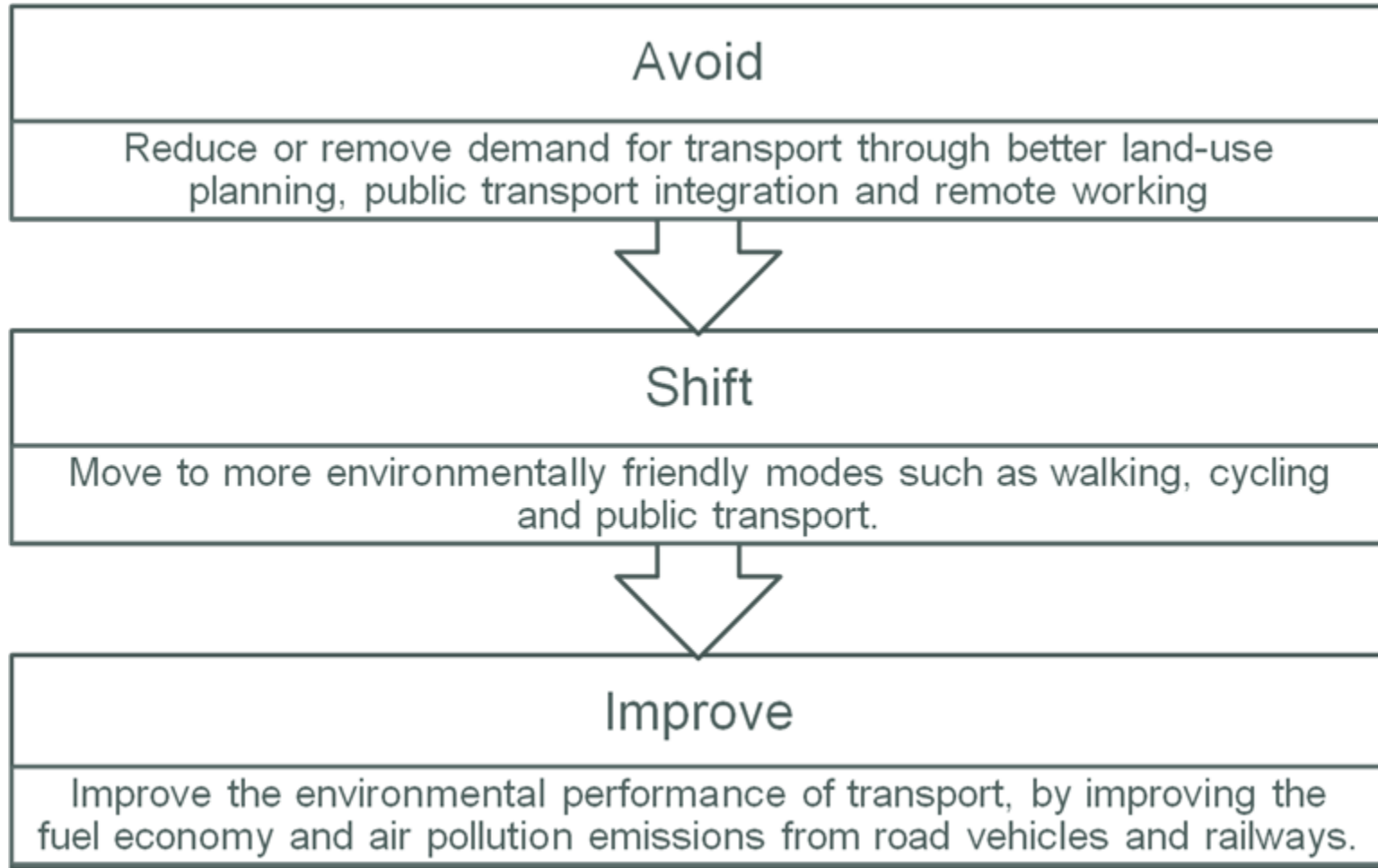
- > UIC Regional Office in Tunis
- > Technical support to African Union Commission (AUC) and the African Union of Railways
- > Strategy Paper with AUC - “Vision 2025 for Railway Development in Africa”
- > Future regional assemblies to look at corridors and training



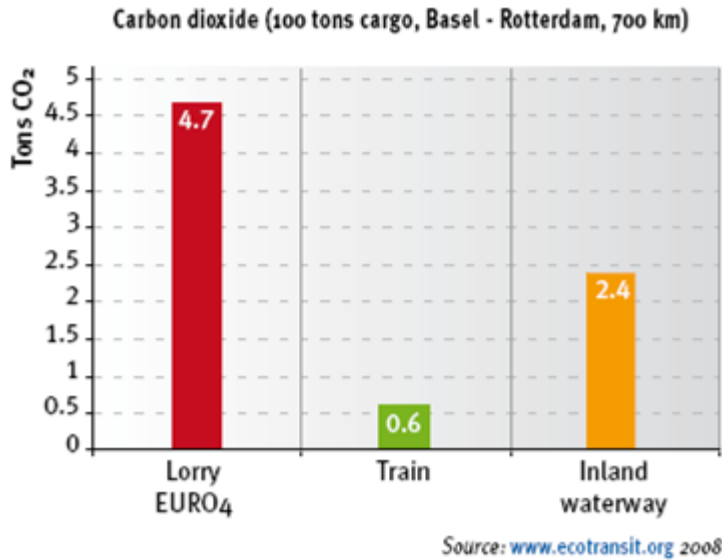
# Rail and sustainable development



# Avoid, Shift, Improve

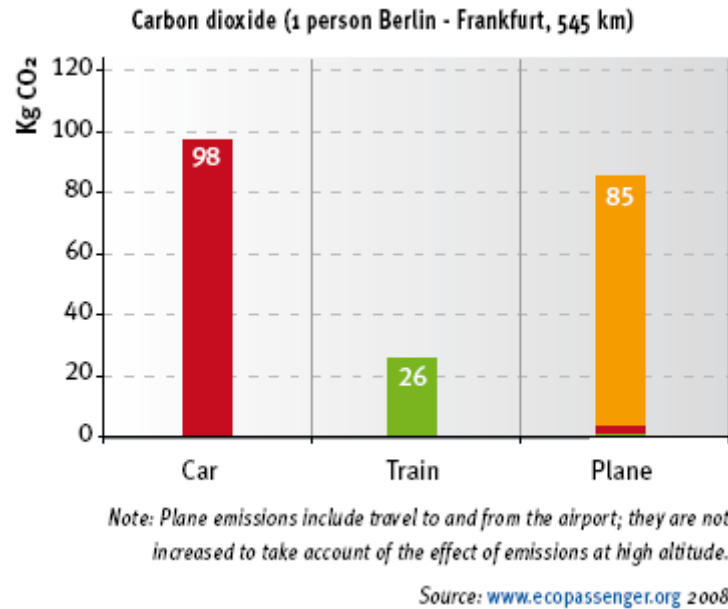


# Rail is a low carbon transport mode



[www.ecotransit.org](http://www.ecotransit.org)

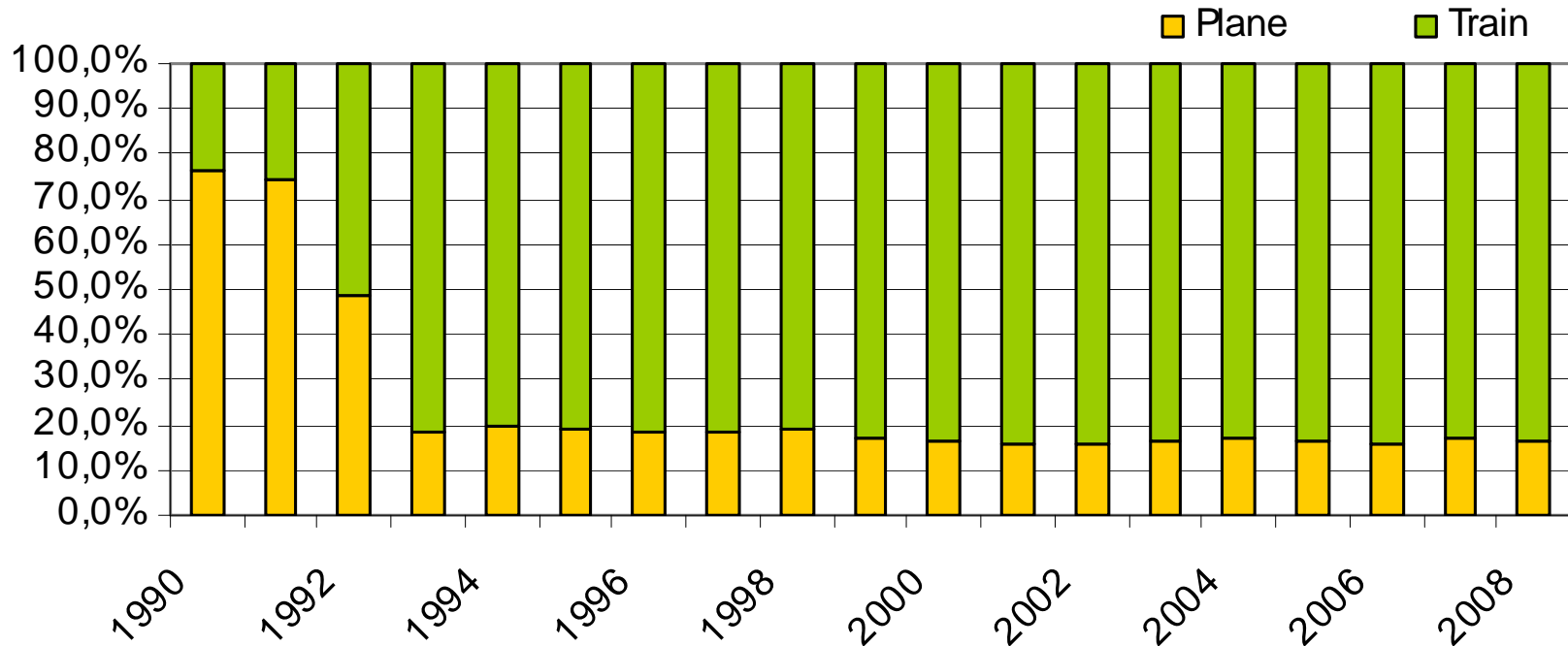
(global carbon footprinting freight)



[www.ecopassenger.org](http://www.ecopassenger.org)

(carbon footprinting passenger Europe)

# Case study – high speed Spain



Source: Renfe 2009

## > Example AVE Madrid-Sevilla

- Although one third of passengers are induced traffic overall CO2 emissions reduced by 60% on the corridor

# Maintaining our environmental advantage – strategy & targets (Europe)

## Target 2020

Reduction of specific CO2 emissions from train operation by **30%\***

→ Japanese Railways have same objective

## Target 2030

Reduction of specific CO2 emissions from train operation by **50%\***

→ Russian Railways to reduce emissions by 40%

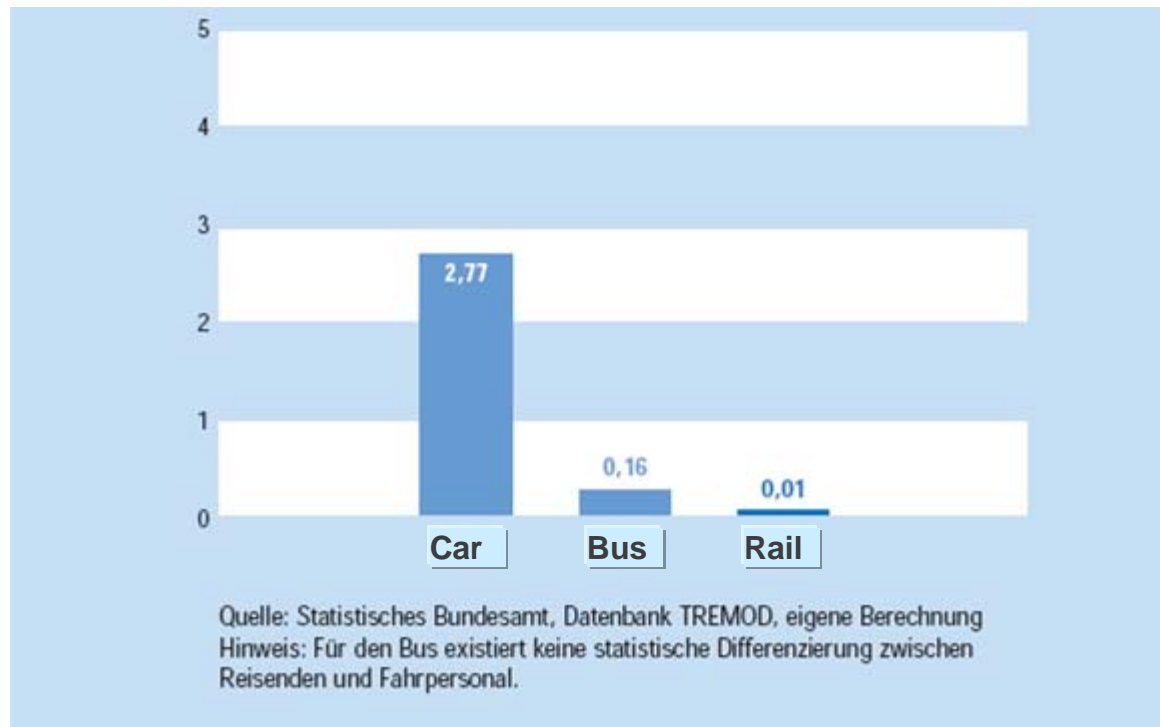
## Vision 2050

European railways will strive towards **carbon-free** train operation by 2050

\* Base year 1990: measured per passenger-km (passenger service) and gross tonne-km (freight service)

# Rail is a very safe transport mode

Casualties per billion passenger-km in Germany 2008



Source: Allianz pro Schiene, Germany 2010

# Rail is a resource efficient transport mode



1 HST



129 cars



11 bus



3.5 planes

# Declaration on Sustainable Mobility & Transport

- > **18 statements on rail's contribution and commitment to sustainable development**
- > **So far signed by 40 UIC members already**  
Representing 60% of rail transport worldwide
- > **2012: Rio 20+: First rail sector sustainability report**

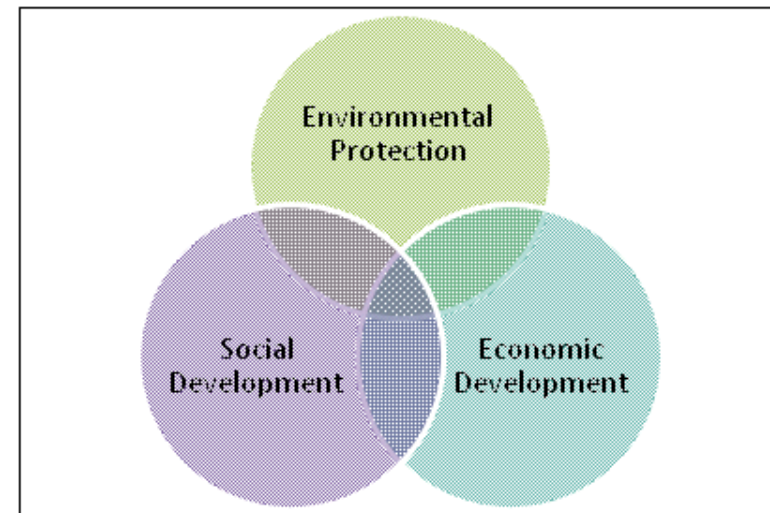


# Conclusions and outlook



# Conclusions: Transport and sustainable development

- > **Rail is...**
  - a low carbon mode
  - a very safe transport mode
  - a very resource efficient mass transport system
- > **Rail has an important social and economic role:**
  - We are a major employer
  - We are key to the movement of freight
  - We are a solution to traffic congestion
- > **Rail has an environmental advantage BUT...**
  - We are not complacent
  - We are working hard to maintain our position!



# Outlook – creating sustainable transport systems

- > A sustainable transport system combines the strengths of all transport modes in one integrated system
- > Policies and funding strategies should follow a set of **key sustainability indicators** for transport
  - Qualified decisions for policy making
  - Qualified decisions for investment
- > Rail is prepared to be the backbone of such sustainable transport systems!

■ ■ ■ Thank you for your kind attention

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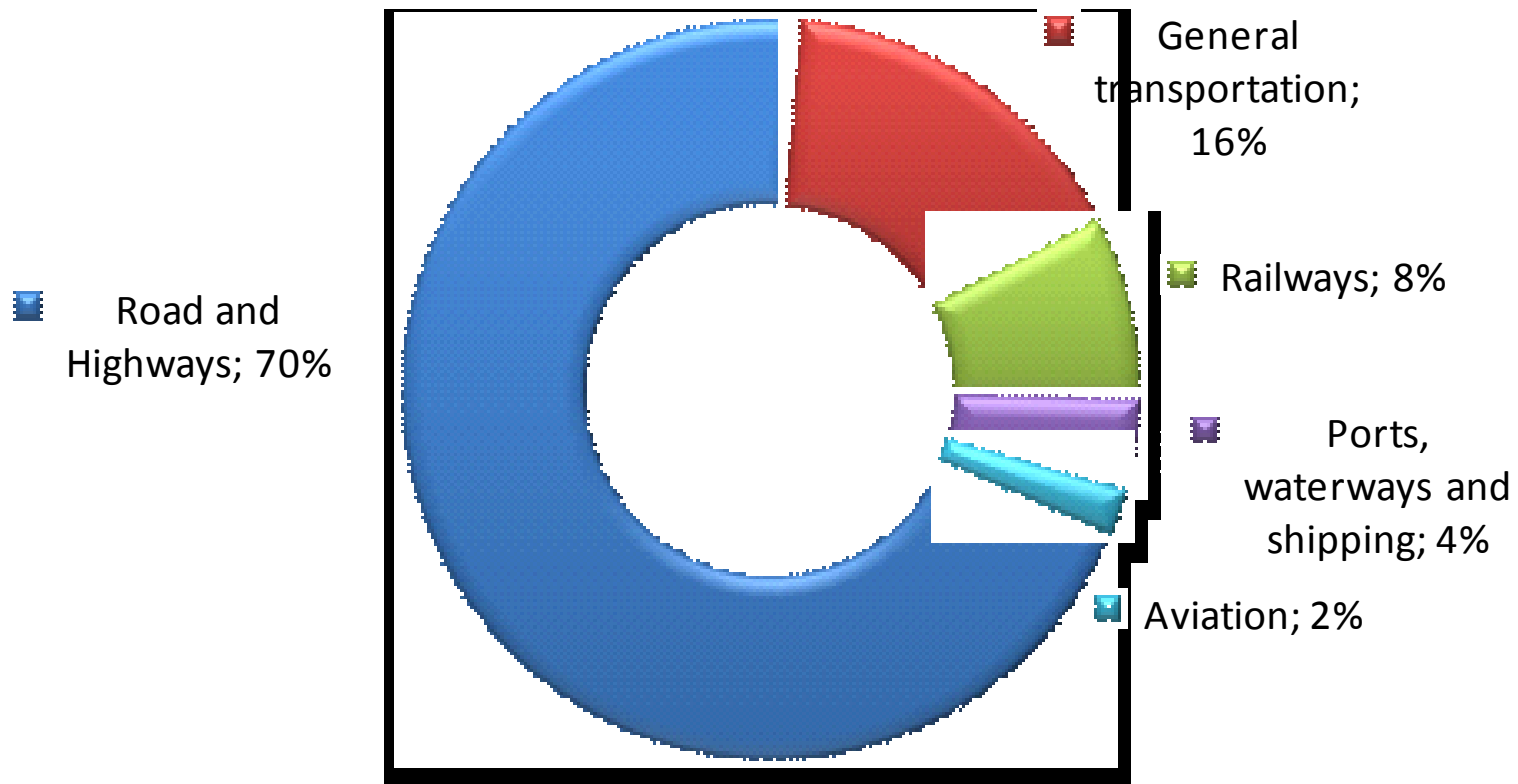


## Backup

# World Bank Transport funding

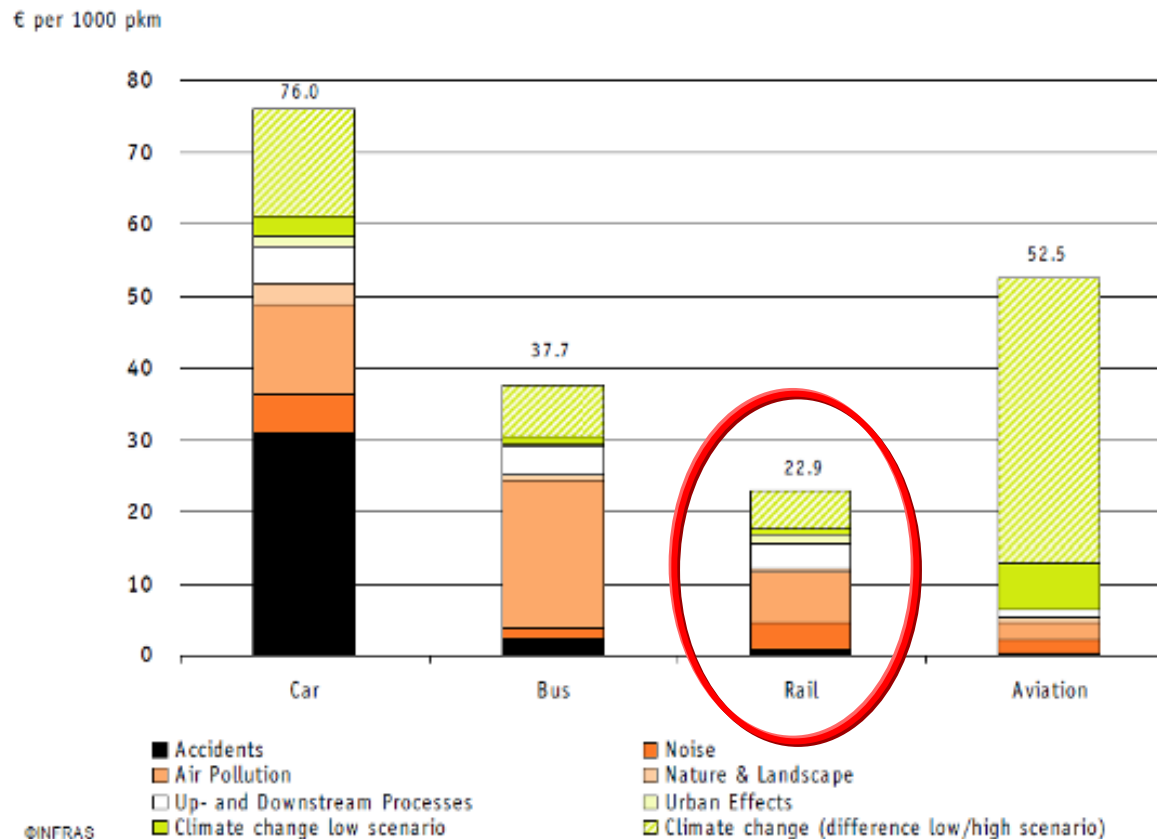
*Road 70% vs. Rail 8%*

## World Bank Transport Portfolio of Active Projects, End of FY08



# External cost of transport - Europe

Average external costs: passenger transport 2000 (excluding congestion)



Source: IWW/ INFRAS, 2004

# **Avoid: Reducing the need to travel and better spatial planning**

- > Strategies such as remote working are outside our control**
- > However, railways do provide input into planning policy so that future developments can be linked to the rail network**
- > For example, in China, there are plans to extend railway length to 100,000 kilometers by 2020 – an increase of 27,000km compared with 2003.**
- > This will form a railway network covering most Chinese cities with a population over 200,000.**

# Shift: Increasing rail's modal share

- > **Moving passengers and freight from road and air to rail can reduce CO2 emissions**
- > **High-speed rail lines can compete successfully with short-haul aviation and road – e.g. Madrid-Seville high speed rail gained 84% market share, reduced private car share by 50%**
- > **In the last 12 years Germany, the Netherlands, the UK and Sweden have increased the modal share of freight railways at a pace that is more than doubling the increase of total transport volumes.**



# Improve: Reducing our carbon footprint

- > Energy & CO<sub>2</sub> database
- > EcoPassenger & EcoTransIT
- > Energy driving
- > Energy Billing
- > Railenergy



## RAILENERGY MAIN ACHIEVEMENTS ALLOCATED IN A TOOLBOX

### THE OVERVIEW

#### HOW TO MEASURE & ANALYSE ENERGY IN RAILWAY SYSTEMS?

- COMMON SIMULATION METHODOLOGY
- FIRST UIC/UNIFE TecRec (100\_001)

#### HOW TO DEFINE, BROWSE & COLLECT ENERGY DATA?

- RAILENERGY KPIs
- ENERGY & CO2 DATABASE

#### HOW TO BENCHMARK ENERGY PERFORMANCE?

- RAILENERGY PERFORMANCE BASELINE
- RANKING OF SAVING POTENTIALS
- TECHNOLOGY ASSESSMENT REPORTS

#### HOW TO COMPARE & PRIORITISE DIFFERENT MEASURES?

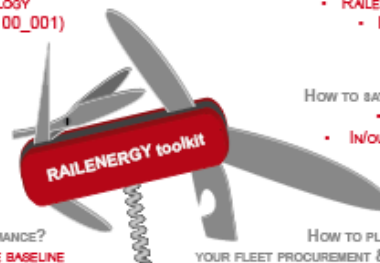
- COST-BENEFIT & EFFECTIVENESS
- RAILENERGY CALCULATOR
- MARKET READINESS

#### HOW TO SAVE ENERGY COSTS?

- LCC SCREENING
- IN/OUT OF SERVICE VIEW

#### HOW TO PLAN STRATEGICALLY YOUR FLEET PROCUREMENT & REFURBISHMENT?

- STRATEGIC ASSESSMENT REPORTS
- PRACTICAL CHECK LISTS FOR PROFESSIONALS



[www.ecopassenger.org](http://www.ecopassenger.org)

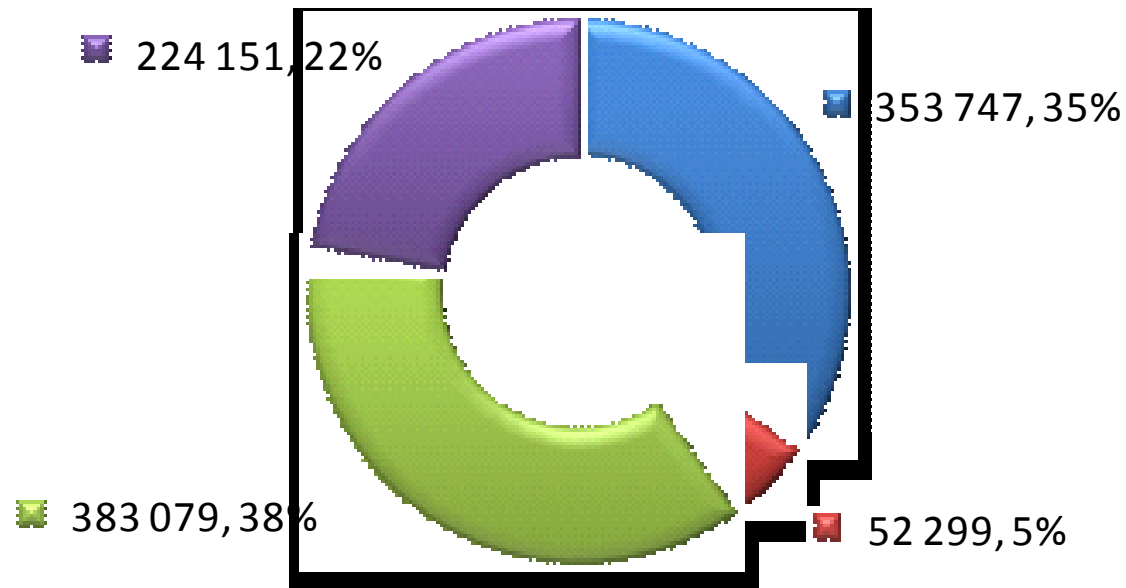
[www.ecotransit.org](http://www.ecotransit.org)

# Global rail market

*Largest rail networks in Europe, Asia, North America*

## Length of lines (km)

■ Europe ■ Africa ■ America ■ Asia and Oceania

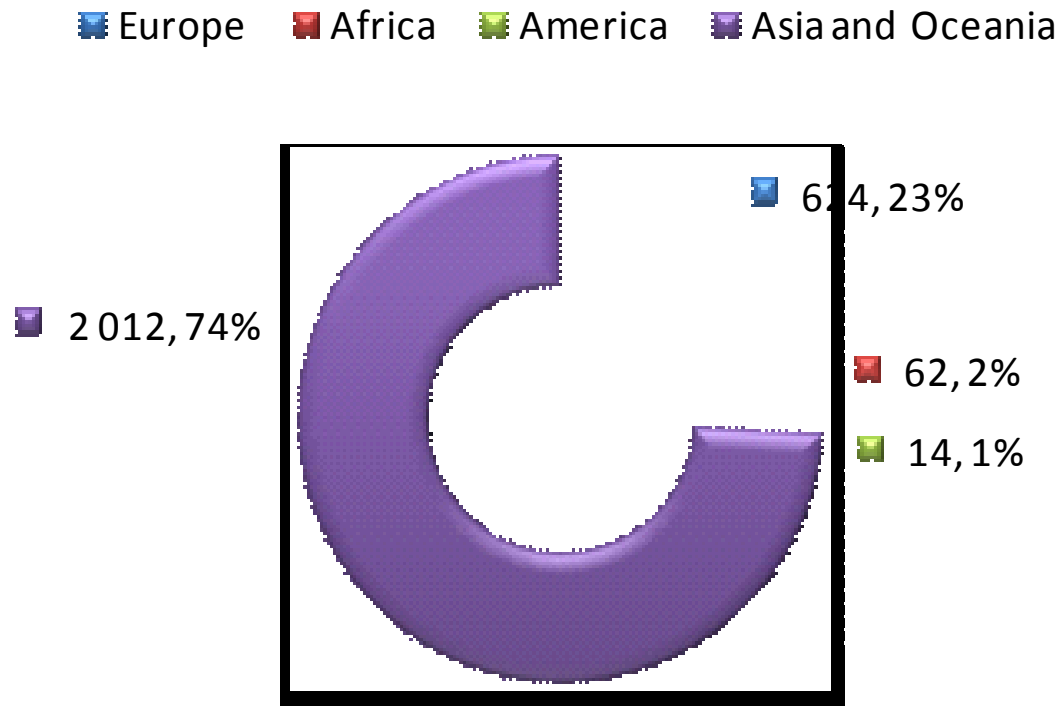


Source: UIC International Railway Statistics 2009

# Global rail market

*Asia dominates in terms of passenger volume*

## Billion passenger km



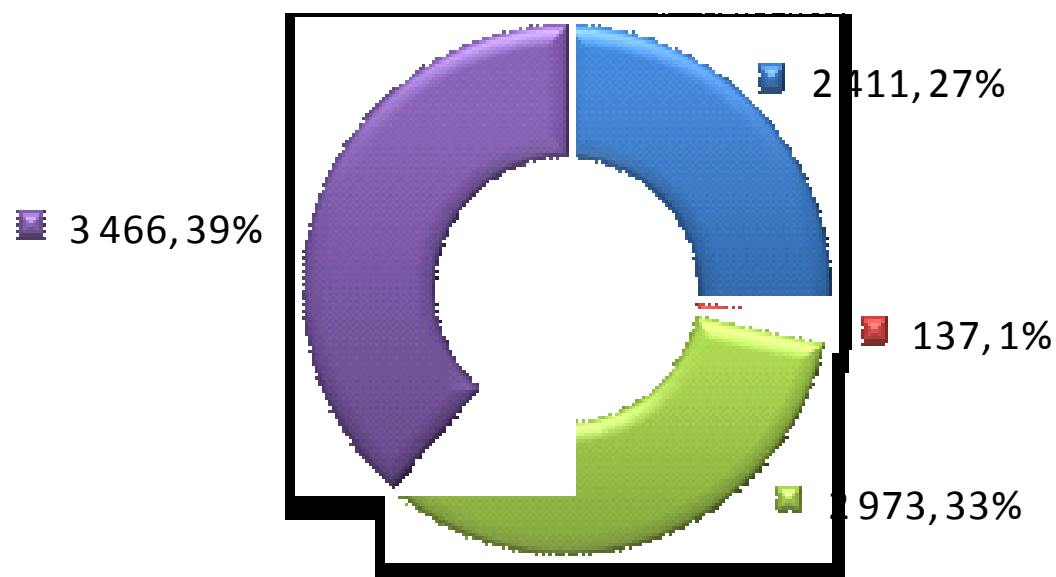
Source: UIC International Railway Statistics 2009

# Global rail market

*Total Freight transport volume equally in America, Europe, Asia*

## Freight km

■ Europe ■ Africa ■ America ■ Asia and Oceania



Source: UIC International Railway Statistics 2009